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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/738,438

12/17/2003

Wu Jiang

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20306

7590

04/11/2006

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EXAMINER

AKANBI, ISIAKA O

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 04/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/738,438

Applicant(s)

JIANG ET AL.

Examiner

Isiaka O. Akanbi

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14-25 and 41 is/are allowed.
- 6) ☒ Claim(s) 1-3, 12, 13 and 27-36 is/are rejected.
- 7) ☒ Claim(s) 5-11 and 37-40 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 17 December 2003
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Information Disclosure Statement*

The information disclosure statement file 17 December 2003 has been entered and reference considered by the examiner.

### *Drawings*

The examiner approves the drawings filed 17 December 2003.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 12-13, 27-29, 30-31 and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Sato et al. (4,861,148).

As regard to claims 1, 27-28 and 34, Sato discloses a finite conjugate reflective light imaging system comprising, in order from an object side toward an image plane comprising of the following:

a first mirror (3) comprising a central aperture and a concave reflective surface, the concave reflective surface facing the image plane (7), a second mirror (2) comprising a convex reflective surface facing the object side, wherein light from an object (20) passes through the central aperture and is reflected by the convex reflective surface toward the concave reflective surface of the first mirror (3) and an aberration correction system (4) that collects the light reflected from the first mirror (3) and transmits it toward the image plane (7) (fig. 5/9/10)

As to claim 2, according to claim 1, Sato discloses wherein the positional relationship between the object and the first mirror creates a large angular field of view, greater than about ten degrees (fig. 5/9/10).

As to claim 3, Sato discloses wherein the aberration correction system (4) substantially corrects off-axis optical aberrations that result from the large angular field of view (fig. 5/9/10).

As to claims 12, 13 and 29, Sato discloses wherein the object side Numerical Aperture is between about 0.01 and about 0.1 and the magnification of the system is less than about 2 (col. 1, line 20-45).

As to claims 30 and 31, Sato discloses wherein the system is a finite conjugate system and wherein light reflected by the first mirror (3) is directed toward a single image plane (7) (fig. 5).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 35 and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Graefe et al. (6,483,588 B1).

As regard to claim 35, Graefe discloses a system for simultaneously measuring or monitoring luminescence from a plurality of samples disposed in a multiple-well plate, the system comprising of the following:

a first reflective surface (40) with optical power that directs light from the plurality of samples (13) toward an image plane and an optical sensor (45) proximate the image plane, the optical sensor being responsive to the luminescence from the plurality of samples and being positioned to receive light from the first reflective surface (fig. 4)(col. 5, line 57-col. 6, line 1-19).

As to claim 36, Graefe discloses wherein the luminescence comprising fluorescence by (3)(fig. 4).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (4,861,148).

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over of Sato, as applied to claim 31. The reference of Sato teaches of the features of claim 31, comprising light reflected by the first mirror (3) that is directed toward a single image plane (7), however the reference of Sato is silent regarding an optical sensor proximate the single image plane. The use of an optical sensor proximate the single image plane would have been well know as evident by Sillitto (figs. 1 and 2). It would have been obvious to one having ordinary skill in the art at the time of invention to use an optical sensor proximate the single image plane for the purpose of viewing/forming an accurate image.

As regard to claim 33, Sato discloses finite conjugate reflective light imaging system comprising, in order from an object side toward an image plane comprising a first mirror (3) comprising a central aperture and a concave reflective surface, the concave reflective surface facing the image plane, a second mirror (2) comprising a convex reflective surface facing the object side, wherein light from an object passes through the central aperture and is reflected by the convex reflective surface toward the concave reflective surface of the first mirror, wherein light reflected by the first mirror is directed toward the image plane (7) and wherein the magnification of the system is less than about 2 (figs 5 and 6) (col. 1, line 20-45), however the reference of Sato is silent regarding an optical sensor proximate the single image plane. The use of an optical sensor proximate the single image plane would have been well know as evident by Sillitto (figs. 1 and 2). It would have been obvious to one having ordinary skill in the art at the time of invention to use an optical sensor proximate the single image plane for the purpose of viewing/forming an accurate image.

***Allowable Subject Matter***

Claims 14-26 and 41 are allowable

As to claim 14, the prior art of record, taken alone or in combination, fails to disclose or render obvious an aberration correction system comprising a refractive lens group that collects the light reflected from the first mirror and transmits it toward the image plane. Claims 15-19 are allowable by virtue of their dependency on claim 14.

As to claim 20, the prior art of record, taken alone or in combination, fails to disclose or render obvious a light source that provides illumination of a first wavelength that excites the fluorescent emission of light of a second wavelength from the plurality of samples and an optical sensor that is responsive to the second wavelength of light from the plurality of samples and positioned to receive light from the light imaging system. Claims 21-25 are allowable by virtue of their dependency on claim 20.

As to claim 26, the prior art of record, taken alone or in combination, fails to disclose or render obvious a light source that provides illumination of a first wavelength that excites the fluorescent emission of light of a second wavelength from the plurality of samples and wherein the aberration correction system comprising a refractive lens group, further the prior art of record, taken alone or in combination, fails to disclose or render obvious wherein the multiple-well plate is positioned on the object side of the imaging system and a charge coupled device responsive to the second wavelength of light and positioned to receive light from the imaging system.

As to claim 41, the prior art of record, taken alone or in combination, fails to disclose or render obvious a first reflective surface with optical power that directs light from the plurality of samples toward an image plane, the first reflective surface facing the image plane and including a central aperture, a second reflective surface with optical power and wherein luminescence from the plurality of samples passes through the central aperture and is reflected by the second reflective surface toward the first reflective surface, further the prior art of record, taken alone or in combination, fails to disclose or render obvious the aberration correction system including at least one refractive element with optical power, the refractive element forming an optical window of the optical sensor.

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Claims 4-11 and 37-40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to claim 4, the prior art of record, taken alone or in combination, fails to disclose or render obvious wherein the aberration correction system comprising a refractive lens group. Claims 5-7 and 10 are allowable by virtue of their dependency.

As to claim 9, the prior art of record, taken alone or in combination, fails to disclose or render obvious wherein the object comprises a plurality of samples disposed in a multiple-well plate.

As to claim 11, the prior art of record, taken alone or in combination, fails to disclose or render obvious wherein the light is due to photoluminescence emission from the object.

As to claim 37, the prior art of record, taken alone or in combination, fails to disclose or render obvious wherein the first reflective surface faces the image plane and includes a central aperture. Claims 38-40 are allowable by virtue of their dependency.

#### **Additional Prior Art**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references listed in the attached form PTO-892 teach of other prior art finite conjugate reflective light imaging system or system for simultaneously measuring or monitoring luminescence from a plurality of samples disposed in a multiple-well plate that may anticipate or obviate the claims of the applicant's invention.

#### **Conclusion**

#### **Fax/Telephone Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Isiaka Akanbi whose telephone number is (571) 272-8658. The examiner can normally be reached on 8:00 a.m. - 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

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supervisor, Gregory J. Toatley Jr. can be reached on (571) 272-2059. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Isiaka Akanbi

March 28, 2006

LAYLA G. LAUCHMAN  
PRIMARY EXAMINER

A handwritten signature in black ink, appearing to read 'Layla G. Lauchman', written over the printed name and title.